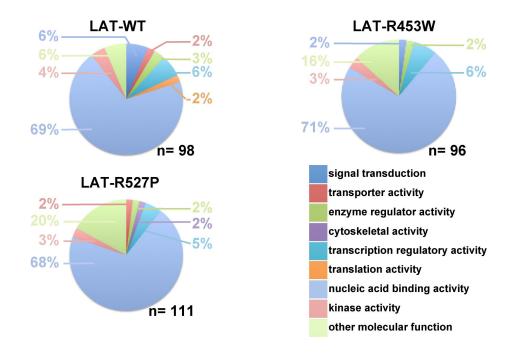
SUPPLEMENTARY INFORMATION

Nuclear speckles (NS): CD5L SFR84 DDX3X SRSP10 EFTUD2 SRRM1 LUC7L3 SRRM2 NPM1 THOC4 RPPF19 U2AF2 RNPS1 SFR81 SFR83 SFR81 SFR81 SFR83 SFR81 SFR81 SFR83 SFR84 DX3X SRRM2 NPM1 THOC4 RPPF19 U2AF2 RNPS1 SFR84 U2AF2 RNPS1 SFR84 U2AF2 RNPS1 SFR84 U2AF2 RNPS1 SFR84 U2AF2 Lamina (NL): EMD							
CDC5L SFR34 HNRNPM PRPF19 SRRM1 NONO SFR31 HNRNPM NONO SFR31 HNRNPM HNRNPM HNRNPM HIST1H1A HNRNPM HIST1H1A HNRNPM HIST1H1C HIRRNPM HIST1	Nuclear Bodies (NB):						
DDX3X LUC71.3 RNPS1 SRRM1 LUC71.3 SRRM2 SFPQ SFPQ SFPQ SFPQ SFRM1 LUC71.3 SRRM2 SFPQ SFPQ SFPQ SFRM1 LUC71.3 SRRM2 SFPQ SFPQ SFRM1 LUC71.3 SRRM2 SFPQ SFPQ SFRM1 LUC71.3 SRRM2 SFPQ SFRM1 THOC4 PRFF19 U2AF2 RNPS1 SFRS1 SFRS2 SFRS4 U2AF2 RNPS1 SFRS1 SFRS3 SFRS4 U2AF2 RNPS1 SFRS1 SFRS1 SFRS1 SFRS1 SFRS2 SFRS4 SFRS4 U2AF2 RNPS1 SFRS1 SFRS1 SFRS1 SFRS1 SFRS2 SFRS4 SFRS4 U2AF2 RNPS1 SFRS1 SFRS1 SFRS2 SFRS4 SFRS4 U2AF2 RNPS1 SFRS1 SFRS1 SFRS1 SFRS2 SFRS4 SFRS4 SFRS4 SFRS4 SFRS4 SFRS4 SFRS4 SFRS5 SFRS4 SFRS4 SFRS5 SFRS4 SFRS5 SFRS4 SFRS5 SFRS4 SFRS5)
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SPICEOSOMAI COMPLEX STRY SPRS1 SFRS1 SFRS1 SFRS1 SFRS1 SFRS3 Cajal Body (CB): DKC1 EFTUD2 EBL NOP58 GARI SRRM2 NHP2 Nuclear Lamina (NL): EMD DDX38 DDX3 DDX31 DDX36 DDX11 EMD DDX21 EMD DDX21 EMD DDX23 DDX31 DDX31 DDX31 EFTUD2 HNRNPA1L2 HNRNPA1L2 HNRNPA2B1 HNRNPA3 H2AFX HIST1H3A HNRNPA HNRNPA1	TO A STATE OF THE PARTY OF THE	NONO					
NPM1 THOC4 PRPF19 U2AF2 RNPS1 SFRS1 SFRS1 SFRS3 Cajal Body (CB): DKC1 EFTUD2 FBL NOP58 GAR1 SRRM2 NHP2 Nuclear CDC5L BAT1A CDC5L CDC5L DDX21 LBR DDX3 LBR DDX3 LBR DDX3 LBR DDX3 LBR DDX415 EFTUD2 HNRNPA115 EFTUD2 HNRNPA11C HNRNPA2B1 HNRNPA3 H2AFX HST1H3A HNRNPC HNRNPA1 HNRNPC HNRNPN HNRN	EFTUD2 SRRM1	SFPQ					
Nuclear pore (NP): GAR1 NPM1 SRSF5	LUC7L3 SRRM2						
Cajal Body (CB): DKC1 EFTUD2 FBL NOP58 GAR1 SRRM2 NHP2 BAT14 CDC5L LBR LMNA DDX18 PPP1C DDX23 LBR DDX18 PPP1C DDX24 LRNA DDX21 RPP2 DDX5 LBR LMNA DDX21 RPP2 DDX6 LBR LMNA DDX21 RPP2 DDX18 PPP1C CAR1 RPP2 DDX18 LBR LMNA DDX21 RPP2 DDX19 LBR LMNA DDX21 RPP2 DDX19 LBR LMNA DDX21 RPP2 LBR LMNA DDX21 RPP2 LBR LMNA DDX21 RPP2 CAR1 RPP1 LBR LBR LBR LMNA LBR LBR LBR LMNA DDX5 RARP1 CAR1 RPP1 LBR LBR LBR LMNA LBR LBR CAR1 RPP1 LBR LBR LMNA LBR LBR LACIN1 NOP58 LBR LBR LMNA LBR LBR LACIN1 NOP58 LBR LBR LACIN1 RARP1 LBR	NPM1 THOC4						UZAFZ
Cajal Body (CB): DKC1 EFTUD2 FBL NOP58 GAR1 SRRM2 NHP2 Spliceosomal Complex (SC): BAT14 CDC5L DDX23 DDX5 PARP1 DDX23 DDX5 DDX18 PPP1CC DDX23 DDX5 LMNA DDX18 PPP1CC DDX24 RPF2 DDX21 RPF2 DDX5 DHX15 FBL RPL6 GAR1 RPL11 HNRNPA1L2 HNRNPA2B1 HNRNPA2B1 HNRNPA2B1 HNRNPA3 H2AFY HIST1H2B HNRNPA2B1 HNRNPA3 RPS3A HNRNPC H2AFY HIST1H3A ILF2 RPS6 HNRNPM HIST1H1A HNRMPK MYOC1 RSL1D1 HNRNPM HIST1H1A HNRMPK MYOC1 RSL1D1 HNRNPM HIST1H1A HP1BP3 NCL SFRS5 HNRNPN HIST1H1C TRIM28 NHP2 SFRS9 NHP2 SFRS9 NOP2 TOP1 NOP56 TRIM28 SRRM1 SRRM1 SRRM2 SRRM1 SRRM1 SRRM2 SRRM1 SRRM2 SRRM1 SRRM2 SRRM1 SRRM2 SRRM1 SRRM2 SRRM1 SRRM2 SRRM1 SRRM2 SRRM1 SRRM2 SRRM1 SRRM2 HNRNPU HNRNPU FBL NCL RBBP4 TOP1 FBL NCL RBBP4 TOP1 FBL NCL RBBP4 TOP1 NONO RPS2 TRIM28 HNRNPA1L2 SAP18 U2AF2 U2AF2 U2AF2 SAP18 U2AF2 DDX3 SAP18 TOP1 SAP18 TOP1 TOP1 SAP18	PRPF19 U2AF2	Nuclear p	ore (NP): GA	K1	NPM1	SRSF5	
Cajal Body (CB): DKC1 EFTUD2 FBL NOP58 GAR1 SRRM2 NHP2 Spliceosomal complex (SC): BAT14 CDC5L DDX23 LBR DDX18 PPP1C DDX23 LBR DDX18 PPP1C DDX24 RPF2 DDX18 PPP1C DDX5 DDX16 DDX18 PPP1C DDX5 DDX16 PFL NOP58 LMNA DDX1 RPF2 DDX5 DDX16 PFL NOP58 LMNA DDX1 RPF2 DDX21 RPF2 DDX18 PPP1C DDX22 RPF2 DDX18 PPP1C DDX23 LMNA DDX1 RPF2 DDX24 RPF2 RPS6 HNRNPA2B1 HNRNPA112 Chromatin:	RNPS1	LBR					
Cajal Body (CB): DKC1 EFTUD2 FBL NOP58 GAR1 SRRM2 NHP2 Nuclear Lamina (NL): EMD DDX5 DDX5 LBM DDX3 DDX5 LBM DDX41 DDX7 DDX1 DDX5 LBMA DKC1 RP15 DDX5 LBMA DKC1 RP15 DDX5 LBMA DKC1 RP15 DDX1 LBMB1 EFTUD2 HNRNPA1L2 Chromatin: CSNK2A1 HIST1H2BB HNRNPA3 HNRNPA3 H2AFY HIST1H2BB HNRNPA3 H2AFY HIST2H2AB HNRNPA3 H2AFY HIST4H4 HNRNPA HNRNPH HNR	(0.0574) Section (1)	MYO1C					
Cajal Body (CB): DKC1 EFTUD2 FBL NOP58 GAR1 SRRM2 NHP2 Nuclear Lamina (NL): DDX5 PARP1 DDX5 PARP1 DDX5 PARP1 DDX5 PARP1 DDX5 PARP1 DDX1 RP2 LBR DDX21 RP2 LMNA DKC1 RPL5 LMNB1 FBL RPL6 EFTUD2 HNRNPA1L2 Chromatin: HNRNPA2B1 HST1H3A ILF2 HNRNPA3 H2AFX HIST1H3A ILF2 HNRNPA3 H2AFY HIST2H2AB ILF3 RP57 HNRNPH1 H2AFZ HIST2H2AB ILF3 RP57 HNRNPK HIST1H1A HNRMPK MY0C1 RSL1D1 HNRNPM HIST1H1B HP1BP3 NCL SFRS5 HNRNPM HIST1H1C TRIM28 NNPD1 NOP56 TRIM28 NNRPD1 NONO SNRPB SNRPD1 LMNB1 DDX3 FRS1 NNRPM HST1H1C TRIM28 NNRPD2 NONO SNRPD3 SFPQ SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM2 SRSF1 HNRNPC RP58 HNRNPU PP1CC DDX5 NMP2 SFRS1 NDA MATR3 HNRNPU PHB RSSF10 NONO RP52 TRIM28 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 HNRNPU PHC RNPS1 TOP1 FBL RP5 CDC5L HNRNPM NPM1 SFRS3 SFRS1 HNRNPW HPB SRS71 NOP56 TRIM28 TRIM28 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 FBL NCL RBP4 THOC4 FUS NNPD2 RNPS1 TOP1 FBL NCL RBP4 FBL NCL RBP4 SRRM2 SRRM1 SRRM1 FBL NCL RBP4 FBL SRRM1 FBL NCL RBP4 FFTUD2 LUC7L3 FFRS1 FBL NCL RBP4 FTUD2 FRM1 FBL NCL RBP4 FTUD2 FBL NCL RBP4 FTUD2 FBL NCL RBP4 FBL N	SFRS3						
Spliceosomal complex (SC): BAT1A CDC5L BDX23 DDX5 DHX15 EFTUD2 HNRNPA1L2 HNRNPA1L2 HNRNPA2B1 HNRNPA2B1 HNRNPA3 HNRNPC HNRNPH HNRNPA HNRNPC HNRNPH HNR	5.1.00						
Spliceosomal complex (SC): BAT1A CDC5L BDX23 DDX5 DHX15 EFTUD2 HNRNPA1L2 HNRNPA1L2 HNRNPA2B1 HNRNPA2B1 HNRNPA3 HNRNPC HNRNPH HNRNPA HNRNPC HNRNPH HNR		33-35 T	INPOSE SE S				
Spliceosomal complex (SC): BAT1A CDC5L BDX23 DDX5 DHX15 EFTUD2 HNRNPA1L2 HNRNPA1L2 HNRNPA2B1 HNRNPA2B1 HNRNPA3 HNRNPC HNRNPH HNRNPA HNRNPC HNRNPH HNR	Caial Body (CB):	NL	CB 👑 . NB				
Spliceosomal complex (SC): BAT1A CDC5L EMD DDX18 PPP1CC DDx23 DDX5 DAX15 EFTUD2 HNRNPA1L2 HNRNPA2B1 HNRNPA2B1 HNRNPA2B1 HNRNPA3B1 HNRNPA HIST1H1A HNRPA HIST1H1A HNRPA HNRNPA HIST1H1A HNRMPK HIST1H1B H18B3 HNRNPK HIST1H1B H18B3 H18T1H1B HNRNPR HIST1H1B H18B3 H18T1H1B HNRNPR HIST1H1C TRIM28 TRIM28 HNRNPR HIST1H1C TRIM28 TRIM28 HNRNPU HNRNPM HIST1H1B HNRNPW HIST1H1B H18B3 H18T1H1B HNRNPR HIST1H1C TRIM28 H18T1H1B HNRNPR HIST1H1B H18B3 H18T1H1B HNRNPR H18T1H1B H18B3 H18T1H1B HNRNPR H18T1H1B H18B3 H18T1H1C HNRNPR H18T1H1B H18B3 H18T1H1B HNRNPR H18T1H1B H18B3 H18T1H1C HNRNPW H18T1H1B H18B3 H18T1H1C HNRNPR H18T1H1C TRIM28 H18T1H1C HNRNPR H18T1H1B H18B3 H18T1H1C HNRNPR H18T1H1B H18B3 H18T1H1C H18T1H1C TRIM28 H18T1H1C				. 3			
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Complex (SC): BAT1A		Nuclear	333333				R LIRTE
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CDC5L EMD		Lamina (NL):					
DDX23							
DDX5							C
DHX15 EFTUD2 HNRNPA1L2 HNRNPA2B1 HNRNPA2B1 HNRNPA3 H2AFX HIST1H3A HNRNPC H2AFY HIST2H2AB HNRNPK HNRNPK HIST1H1A HNRMPK HIST1H1B HNRNPK HIST1H1B HNRNPK HIST1H1B HNRNPR HIST1H1C TRIM28 NUClear RALY SF3B1 SNRP40 SNRP40 SNRPB SNRPB SNRPB SNRPB SNRPB SNRPB SNRPD1 SNRPD2 SNRPD3 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM2 SRSF1 THOC4 U2AF2 HNRNPU HNRNPU HNRNPU HNRNPU HNRNPU HNRNPU BREF19 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 SRRM2 SRRM1 SRRM1 SRRM2 SRRM1 SRRM1 SRRM1 SRRM2 SRSF1 HNRNPU SRRM2 SRRM1 SRRM1 SRRM1 SRRM1 SRRM1 HNRNPU HNRNPA1L2 SAP18 U2AF2							
FBL RPL6 RPL1					DKC1	RPL5	
HNRNPA1L2		LIVINOI			FBL	RPL6	
HNRNPA2B1	EFTUD2				GAR1	RPL11	
HNRNPA3	HNRNPA1L2				HNRNPA2B1		
HNRNPA3	HNRNPA2B1	CSNK2A1 HIST1H2BB			HNRNPA3 RPS3A		
HNRNPC	HNRNPA3	H2AFX HIST1H3A					
HNRNPH1	HNRNPC						
HIRNPK							
HIST1H1B HP1BP3							
HIST1H1C TRIM28							
Nope							
PRPF19 PRPF6 RALY SF3B1 SNRNP40 SNRPB SNRPD1 SNRPD2 SNRPD3 SRRM1 SRRM2 SRRM1 SRRM2 SRSF1 THOC4 U2AF2 PRPF6 RALY SF3B1 Nuclear Matrix (NM): CD2BP2 HNRNPH1 CD2BP2 HNRNPH1 CDC5L HNRNPK CDC5L HNRNPK CDC5L HNRNPK NPM1 CSNK2A1 HNRNPL PARP1 SFRS4 CSNK2A1 HNRNPM PHB SRSF10 DDX3X HNRNPM PHB SRSF10 DKC1 LMNB1 PHB2 SRRM1 EFTUD2 LUC7L3 PPP1CC SRRM2 SRRM1 FBL NCL RBBP4 THOC4 FUS NHP2 RNPS1 TOP1 GAR1 NONO RPS2 TRIM28 HNRNPA1L2 SAP18 U2AF2		HISTINIC ININIZO					
Nuclear Nuclear SF3B1 SNRNP40 SNRNPB SNRPD1 SNRPD2 SNRPD3 SRRM1 SRRM2 SRRM1 SRRM2 SRSF1 THOC4 U2AF2 U2AF2 U2AF2 U2AF2 SRP1 SRP3 U2AF2 U2AF							
Nucleoplasm: SF3B1					NOP56	TRIM2	8
Matrix (NM):		Nuclear					
SF381		Manhaire (NIRA):		asm :			
SNRNP40 HNRNPM CDC5L HNRNPK NPM1 SFRS3 SNRPB LMNA CSNK2A1 HNRNPL PARP1 SFRS4 SNRPD1 LMNB1 DDX3X HNRNPM PHB SRSF10 SNRPD3 SFPQ EFTUD2 LUC7L3 PPP1CC SRRM2 SRRM1 SRRM1 ELAVL1 MY01C PRPF19 SSRP1 SRSF1 HNRNPU FBL NCL RBBP4 THOC4 U2AF2 U2AF2 HNRNPA1L2 SAP18 U2AF2		` ,			NPH1 NO	P58	SFRS1
SNRPB SNRPD1 LMNA CSNK2A1 HNRNPL PARP1 SFRS4 SNRPD2 NONO DX3X HNRNPM PHB SRSF10 SNRPD3 SFPQ EFTUD2 LUC7L3 PPP1CC SRRM2 SRRM1 SRRM1 ELAVL1 MYO1C PRPF19 SSRP1 SRSF1 HNRNPU FBL NCL RBBP4 THOC4 U2AF2 TRIM28 HNRNPA1L2 SAP18 U2AF2				HNRN	NPK NP	M1	SFRS3
SNRPD1 SNRPD2 NONO DDX3X HNRNPM PHB SRSF10 SNRPD3 SFPQ EFTUD2 LUC7L3 PPP1CC SRRM2 SRRM1 SRRM1 ELAVL1 MYO1C PRPF19 SSRP1 SRSF1 HNRNPU FBL NCL RBBP4 THOC4 U2AF2 TRIM28 HNRNPA1L2 SAP18 U2AF2	SNRPB	LMNA					
SNRPD2 NONO DKC1 LMNB1 PHB2 SRRM1 SRRM1 SRRM1 EFTUD2 LUC7L3 PPP1CC SRRM2 SRRM2 SRRM1 ELAVL1 MYO1C PRPF19 SSRP1 MATR3 FBL NCL RBBP4 THOC4 THOC4 THOC4 FUS NHP2 RNPS1 TOP1 GAR1 NONO RPS2 TRIM28 HNRNPA1L2 SAP18 U2AF2	SNRPD1	LMNB1					
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SRRM1 SRRM1 ELAVL1 MYO1C PRPF19 SSRP1 SRSF1 MATR3 FBL NCL RBBP4 THOC4 SRSF1 HNRNPU FUS NHP2 RNPS1 TOP1 THOC4 U2AF2 HNRNPA1L2 SAP18 U2AF2	SNRPD3	SFPQ					
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SRSF1 HNRNPU FUS NHP2 RNPS1 TOP1 THOC4 U2AF2 HNRNPA1L2 SAP18 U2AF2							
THOC4 U2AF2 HNRNPA1L2 SAP18 U2AF2							
U2AF2 HNRNPA1L2 SAP18 U2AF2		1.111111					
THINKING TEE SAFIO OZAIZ							
YBX1 HNRNPA2B1 SFPQ UBTF			HNRNPA1L	_2	SA	P18	U2AF2
	YBX1		HNRNPA2E	31	SF	PQ	UBTF

Supplemental Figure 1. The 130 nuclear proteins identified in the lamin A tail-binding proteome and their reported intranuclear position. Names in blue indicated known matrin-3 binding partners. Names in red indicate known lamin A binding partners.



Supplemental Figure 2. Molecular function annotation comparing wildtype lamin A tail and lamin A tails engineered with two different mutations associated with myopathy, R453W and R527P. The numbers of proteins found for each LAT were: 98, 96 and 111 for WT, R453W and R527P, respectively. Using MGI GO-Slim chart tool, the number of protein associated with each Molecular Function is expressed as percentage over the total number of proteins present in each laminome. The percentage of proteins described by "other Molecular Function" results from the remnant number of proteins not categorized by any of the eight specific molecular functions mentioned in the figure.